

**SEMICONDUCTOR WAFER FABRICATION FURNACE
IDLE MONITOR AND METHOD OF OPERATION**

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ABSTRACT OF THE DISCLOSURE

A system and method is disclosed for monitoring each of a plurality of furnaces in a furnace process in semiconductor wafer fabrication. A furnace that is left open too long will absorb moisture from the atmosphere and should not be used for a furnace task. The system of the invention comprises a furnace resource allocator that comprises a furnace idle timer unit that keeps track of how long each furnace has been open. If the idle time for a selected furnace exceeds a predetermined limit, that furnace is rejected and another furnace is selected for use. Each furnace that is rejected is subjected to a furnace cycle purge process to remove moisture from the furnace so that the furnace may again be available for use.